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Jabbour et al.

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(54) **METHOD AND SYSTEM FOR QUEUING CALLS BASED ON CALL TIME COMMITMENT**

(75) Inventors: **Fadi R. Jabbour**, Sunnyvale, CA (US); **Johnny H. Lee**, Mountain View, CA (US); **David C. Lee**, Sunnyvale, CA (US)

(73) Assignee: **Cisco Technology, Inc.**, San Jose, CA (US)

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H04M 3/00 (2006.01)

(52) **U.S. Cl.** **379/265.01**; 379/265.02; 379/266.01

(58) **Field of Classification Search** 379/266.03, 379/210, 309, 265.01, 265.02, 266.06; 705/418
See application file for complete search history.

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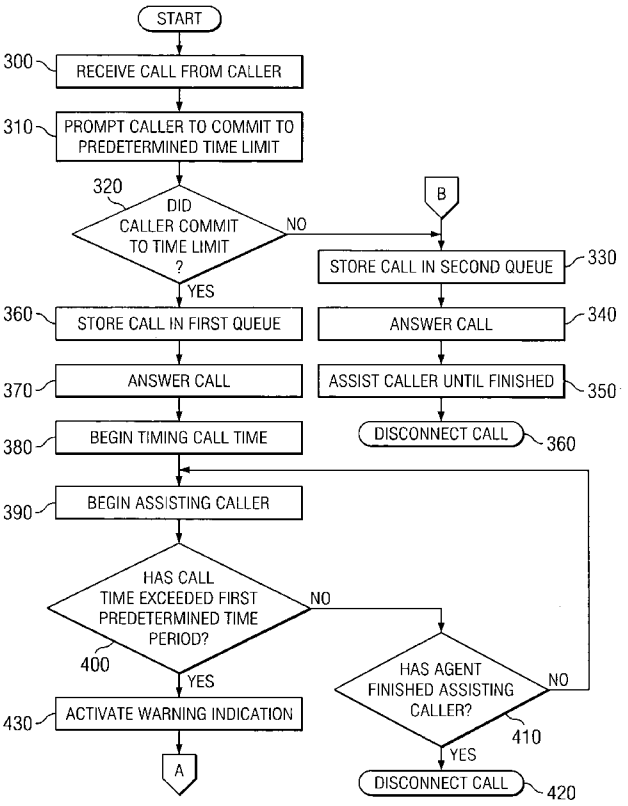
Primary Examiner—Curtis Kuntz
Assistant Examiner—Amal Zenati
(74) *Attorney, Agent, or Firm*—Baker Botts L.L.P.

(57) **ABSTRACT**

A method for routing calls of an automatic call distributor system includes receiving a call from a caller requesting connection with an agent and providing the caller with an option to commit to a predetermined time limit for the call time. The method also includes assigning a higher priority to the call, in response to the caller committing to the predetermined time limit.

43 Claims, 3 Drawing Sheets



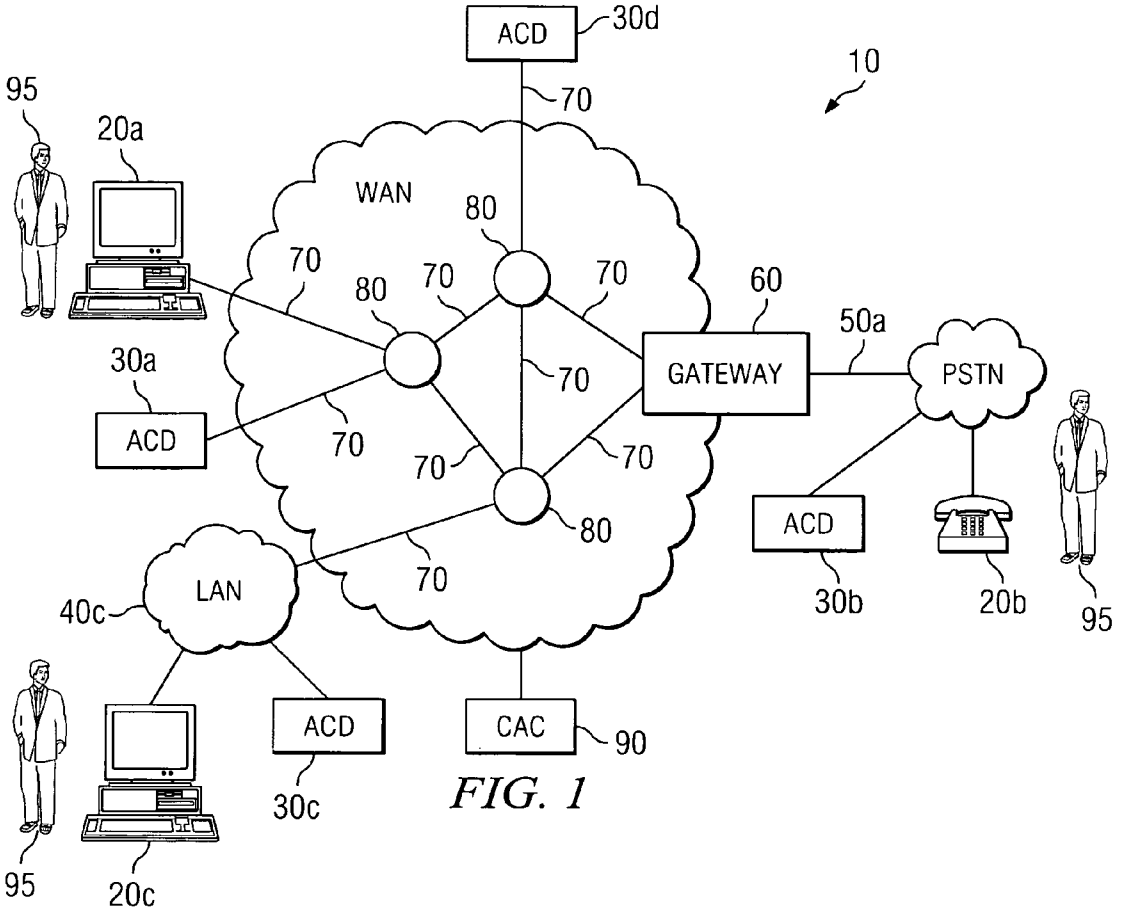

ACD
30d
10
70
95
20a
WAN
80
70
80
70
70
60
50a
30a
GATEWAY
PSTN
ACD
70
70
70
70
80
ACD
30b
20b
95
LAN
40c
70
ACD
CAC
90
30c
95
20c

FIG. 1

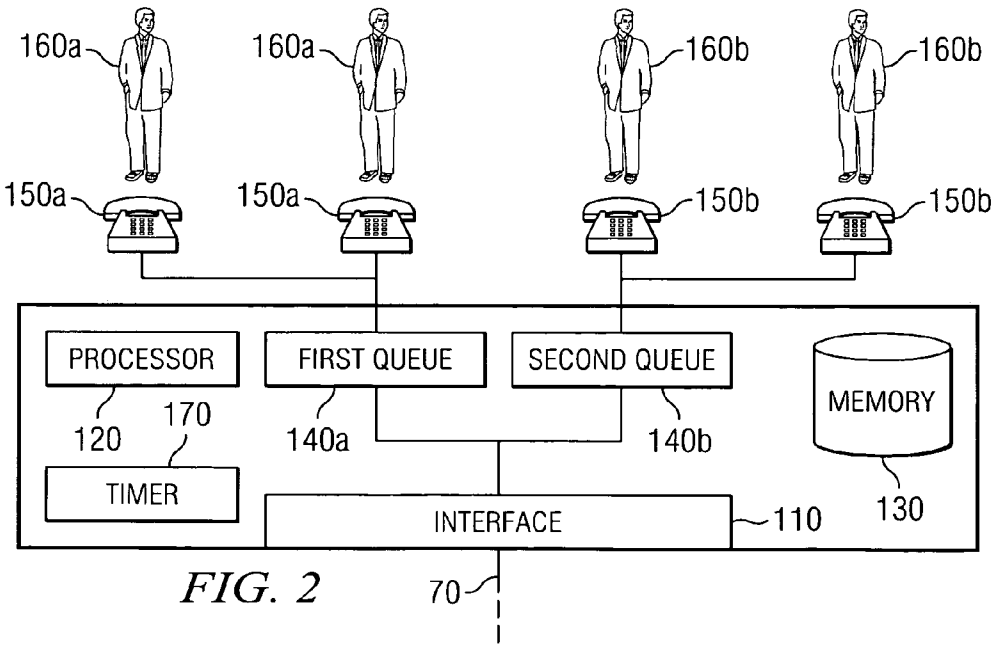

160a
160a
160b
160b
150a
150a
150b
150b
PROCESSOR
FIRST QUEUE
SECOND QUEUE
MEMORY
120
170
140a
140b
TIMER
INTERFACE
110
130
70

FIG. 2

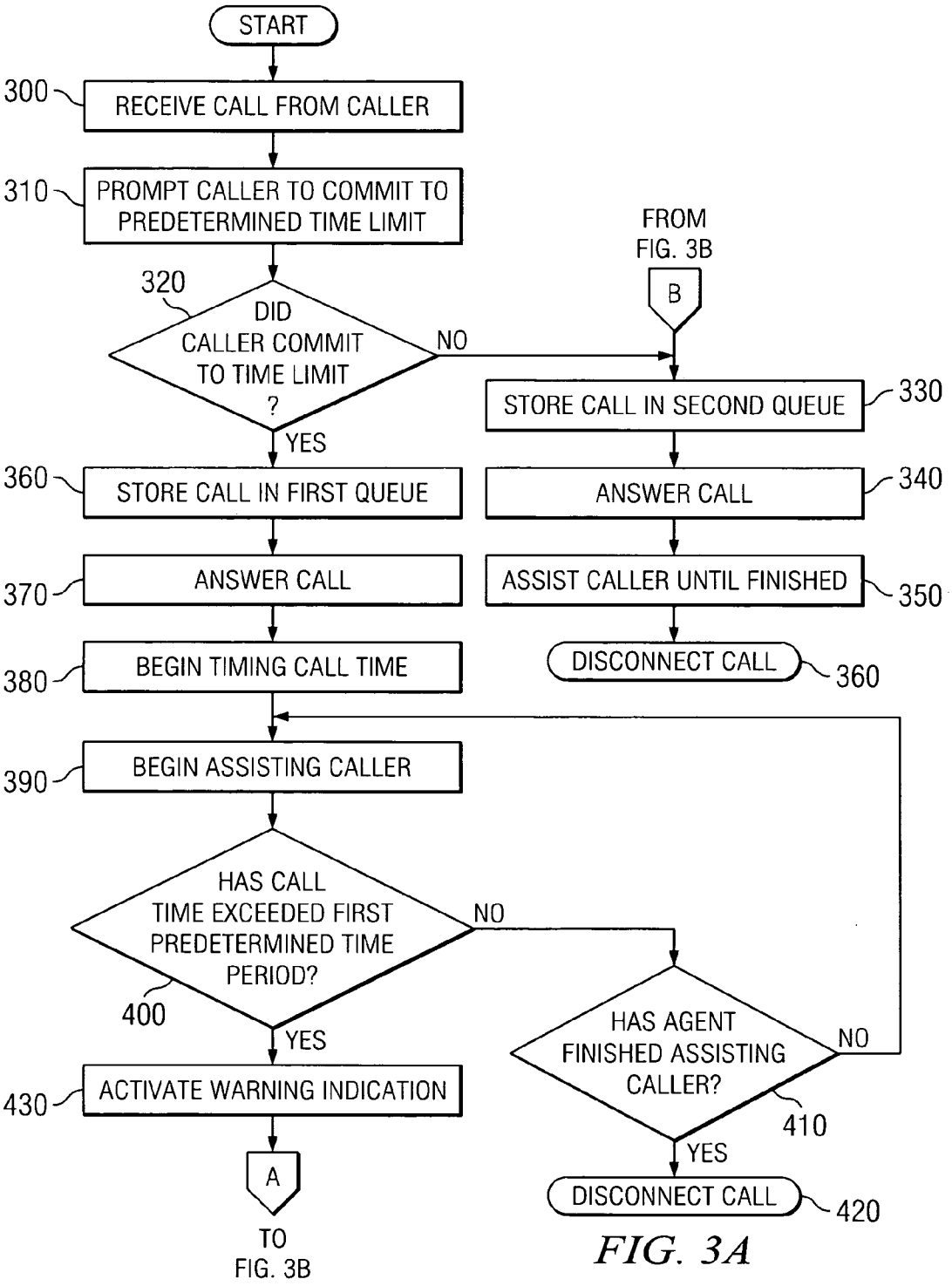

START
300
RECEIVE CALL FROM CALLER
310
PROMPT CALLER TO COMMIT TO PREDETERMINED TIME LIMIT
320
DID CALLER COMMIT TO TIME LIMIT ?
NO
YES
FROM FIG. 3B
B
330
STORE CALL IN SECOND QUEUE
340
ANSWER CALL
350
ASSIST CALLER UNTIL FINISHED
360
DISCONNECT CALL
360
STORE CALL IN FIRST QUEUE
370
ANSWER CALL
380
BEGIN TIMING CALL TIME
390
BEGIN ASSISTING CALLER
HAS CALL TIME EXCEEDED FIRST PREDETERMINED TIME PERIOD?
400
NO
YES
HAS AGENT FINISHED ASSISTING CALLER?
410
NO
YES
430
ACTIVATE WARNING INDICATION
A
TO FIG. 3B
DISCONNECT CALL
420

FIG. 3A

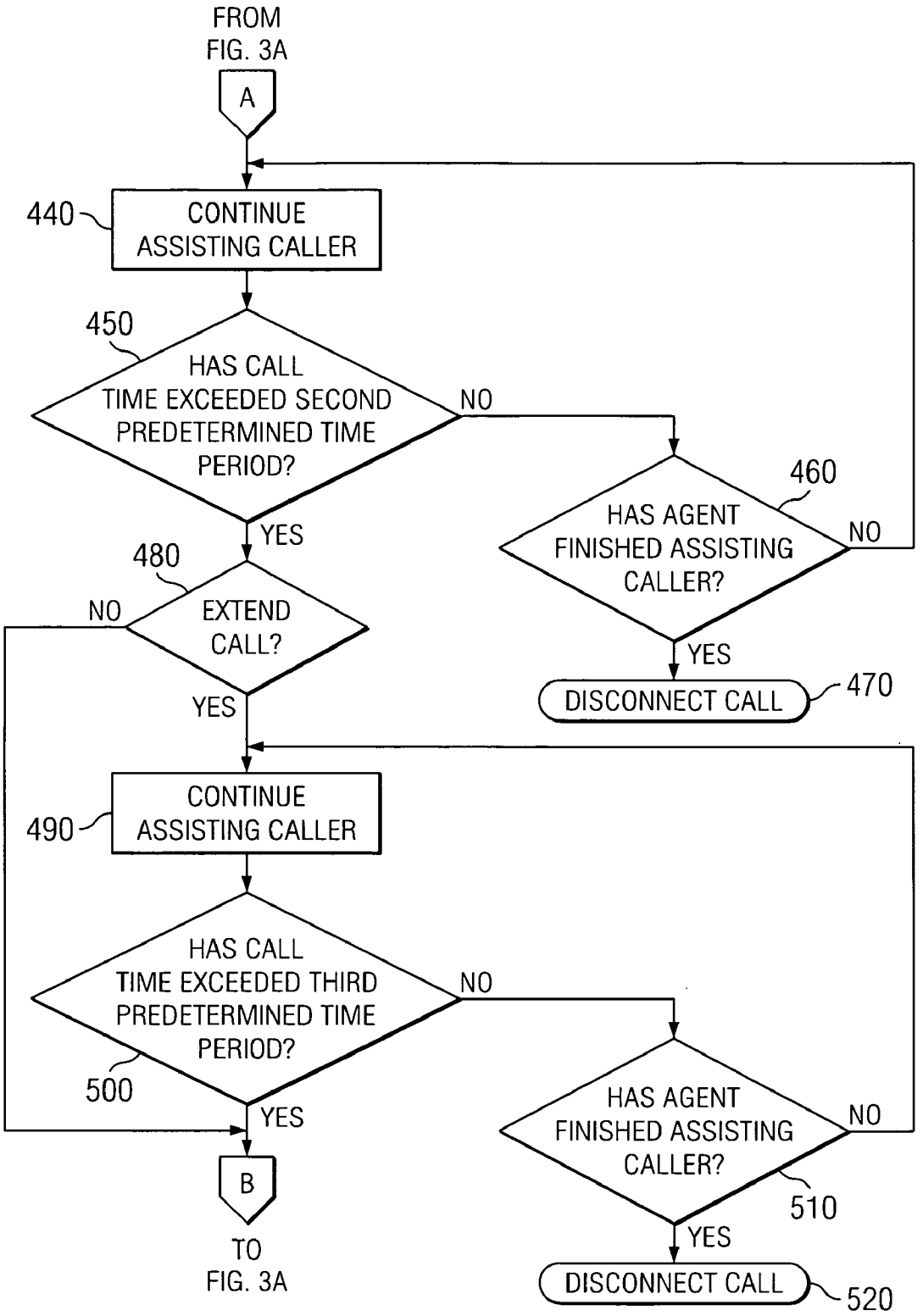

FROM FIG. 3A
A
440
CONTINUE ASSISTING CALLER
450
HAS CALL TIME EXCEEDED SECOND PREDETERMINED TIME PERIOD?
NO
YES
460
HAS AGENT FINISHED ASSISTING CALLER?
NO
YES
DISCONNECT CALL
470
480
EXTEND CALL?
NO
YES
490
CONTINUE ASSISTING CALLER
HAS CALL TIME EXCEEDED THIRD PREDETERMINED TIME PERIOD?
500
NO
YES
HAS AGENT FINISHED ASSISTING CALLER?
510
NO
YES
DISCONNECT CALL
520
B
TO FIG. 3A

FIG. 3B

METHOD AND SYSTEM FOR QUEUING CALLS BASED ON CALL TIME COMMITMENT

TECHNICAL FIELD OF THE INVENTION

This invention relates generally to automated network communication distribution and more particularly, to a method and system for automatic call distribution based on a call time commitment.

BACKGROUND OF THE INVENTION

Automatic call distributors (ACDs) are specialized systems designed to match incoming requests for service, for example a telephone call or an e-mail, with a resource that is able to provide that service, for example a human contact center agent. ACDs generally perform one or more of the following functions: (i) recognize and answer incoming calls; (ii) review database(s) for instructions on what to do with a particular call; (iii) using these instructions, identify an appropriate agent and queue the call, often times providing a prerecorded message; and (iv) connect the call to an agent as soon as the agent is available.

Thus, when no agent is available to assist a caller, callers must wait in a queue until any of the agents finishes with its current caller. Consequently, a large number of callers that have very simple inquiries or requests may be forced to wait in the queue behind a small number of callers with time-intensive inquiries. This results in wasted time for the queued callers and consumes telecommunication resources on the ACD system.

SUMMARY OF THE INVENTION

The present invention provides a method and system for automatic call distribution by prioritizing callers based on a bounded call time commitment that substantially eliminates or reduces at least some of the disadvantages and problems associated with previous methods and systems for automatic call distribution.

In accordance with one embodiment of the present invention, a method for routing calls of an automatic call distributor system includes receiving a call from a caller requesting connection with an agent and providing the caller with an option to commit to a predetermined time limit for the call time. The method also includes assigning a higher priority to the call, in response to the caller committing to the predetermined time limit.

In accordance with another embodiment of the present invention, an automatic call distributing system for managing calls includes one or more interfaces operable to receive a call, including a request for service, from a user over a first connection with a first endpoint of the user. Also included in the system is a processor operable to provide the caller with an option to commit to a predetermined time limit for the call.

Important technical advantages of certain embodiments of the present invention include providing expedited service to particular callers. Other important technical advantages of certain embodiments of the present invention include more accurate estimates of wait times and improved efficiency in the allocation of call answering resources.

Other technical advantages of the present invention will be readily apparent to one skilled in the art from the following figures, descriptions, and claims. Moreover, while specific advantages have been enumerated above, various embodiments may include all, some, or none of the enumerated advantages.

BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the present invention and its advantages, reference is now made to the following description, taken in conjunction with the accompanying drawings, in which:

FIG. **1** is a block diagram illustrating a communication system including a plurality of endpoints operable to communicate among each other and a plurality of automatic call distributors (ACDs), in accordance with a particular embodiment of the present invention;

FIG. **2** is a block diagram illustrating an ACD of FIG. **1** in more detail, including aspects of the present invention; and

FIG. **3** is a flow chart illustrating a method for automatic call distribution, in accordance with another embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

FIG. **1** illustrates a communication system **10** including a plurality of endpoints **20***a*-**20***d* having the ability to establish communication sessions between each other and/or automatic call distributors (ACDs) **34***a*-**34***d*, using one or more of communication networks **40***a*-**40***c*. Automatic call distributors are specialized communication systems designed to route incoming calls to available agents, so that calls are properly and/or evenly distributed. For the purposes of this specification, "automatic call distributor" shall refer to any combination of hardware, software and/or embedded logic, which is operable to automatically distribute incoming calls. Furthermore, "calls" shall include requests for service transmitted using any audio and/or video means, including signals, data or messages transmitted through voice devices, text chat, web sessions, facsimile, instant messaging and e-mail, and a "caller **95**" may represent a user of any endpoint **20***a*-**20***d* initiating such a "call."

The teachings of the present invention provide a system and method for managing calls of an ACD that allows callers placing a call to a particular ACD **30** to commit to a bounded call time for the call in exchange for being placed in a preferred queue of calls. If the call exceeds the predetermined time limit, ACD **30** initiates a remedial action with respect to the call. Particular embodiments may implement any of several different remedial actions as described in greater detail below.

In the illustrated embodiment, communication network **40***a* is a wide area network (WAN) that enables communication between a plurality of endpoints **20***a*-**20***d* and automatic call distributors **34***a*-**34***d* distributed across multiple cities and geographic regions. In another embodiment, a single, central automatic call distributor may be used, which distributes incoming calls to agents distributed across multiple cities and geographic regions. Communication network **40***b* is a public switched telephone network (PSTN) and couples endpoint **20***b* and automatic call distributor **34***c* with communication network **40***a* through gateway **60**. Communication network **40***c* is a local area network (LAN), which couples endpoints **20***c* and **20***d* and automatic call distributor **34***d* with communication network **40***a*. Accordingly, users of endpoints **20***a*-**20***d* and automatic call distributors **34***a*-**34***d* can establish communication sessions between and among each network component coupled for communication with one or more of networks **40***a*-**40***c*. Communication links **50***a* and **50***b* couple communication networks **40***a* and **40***b*, and communication networks **40***a* and **40***c*, respectively. A call admission control (CAC) system **90** may be used to monitor the amount of bandwidth available over link **50***b*.

Communication network **40***a* includes a plurality of segments **70** and nodes **80** that couple endpoint **20***a* with automatic call distributors **34***a* and **34***b*, gateway **60**, and communication networks **40***b*-**40***c*. Therefore, a user of endpoint **20***a* is provided with access to endpoints **20***b*-**20***d*, and automatic call distributors **34***a*-**34***d*. Nodes **80** may include any combination of network components, gatekeepers, call managers, routers, hubs, switches, gateways, endpoints, or other hardware, software, or embedded logic implementing any number of communication protocols that allow for the exchange of packets in communication system **10**.

Although the illustrated embodiment includes three communication networks **40***a*-**40***c*, the term "communication network" should be interpreted as generally defining any network capable of transmitting audio and/or video telecommunication signals, data, and/or messages, including signals, data or messages transmitted through text chat, instant messaging and e-mail. Any one of networks **40***a*-**40***c* may be implemented as a local area network (LAN), wide area network (WAN), global distributed network such as the Internet, Intranet, Extranet, or any other form of wireless or wireline communication network. Generally, network **40***a* provides for the communication of packets, cells, frames, or other portions of information (generally referred to as packets herein) between endpoints **20***a*-**20***d*. Communication network **40***a* may include any number and combination of segments **70**, nodes **80**, endpoints **20***a*-**20***d*, and/or automatic call distributors **34***a*-**34***d*.

In a particular embodiment, communication network **40***a* employs voice communication protocols that allow for the addressing or identification of endpoints, nodes, and/or automatic call distributors coupled to communication network **40***a*. For example, using Internet protocol (IP), each of the components coupled together by communication network **40***a* in communication system **10** may be identified in information directed using IP addresses. In this manner, network **40***a* may support any form and/or combination of point-to-point, multicast, unicast, or other techniques for exchanging media packets among components in communication system **10**. Any network components capable of exchanging audio, video, or other data using frames or packets, are included within the scope of the present invention.

Network **40***a* may be directly coupled to other IP networks including, but not limited to, another LAN, or the Internet. Since IP networks share a common method of transmitting data, telecommunication signals may be transmitted between telephony devices located on different, but interconnected, IP networks. In addition to being coupled to other IP networks, communication network **40***a* may also be coupled to non-IP telecommunication networks through the use of interfaces or components, for example gateway **60**. In the illustrated embodiment, communication network **40***a* is coupled with PSTN **40***b* through gateway **60**. PSTN **40***b* includes switching stations, central offices, mobile telephone switching offices, pager switching offices, remote terminals, and other related telecommunications equipment that may be located throughout the world. IP networks transmit data (including voice and video data) by placing the data in packets and sending each packet individually to the selected destination, along one or more communication paths. Unlike a circuit-switched network (like PSTN **40***b*), a dedicated circuit is not required for the duration of a call or fax transmission over IP networks.

Technology that allows telecommunications to be transmitted over an IP network may comprise Voice over IP (VoIP), or simply Voice over Packet (VoP). In the illustrated embodiment, endpoint **20***d*, automatic call distributors **34***a*-**34***b*, and gateway **60** are IP telephony devices. IP telephony devices have the ability to encapsulate a user's voice (or other input) into IP packets so that the voice can be transmitted over network **40***a*. IP telephony devices may include telephones, fax machines, computers running telephony software, nodes, gateways, or any other devices capable of performing telephony functions over an IP network.

It will be recognized by those of ordinary skill in the art that endpoints **20***a*-**20***d*, automatic call distributors **34***a*-**34***d*, and/or gateway **60** may be any combination of hardware, software, and/or encoded logic that provides communication services to a user. For example, endpoints **20***a*-**20***d* may include a telephone, a computer running telephony software, a video monitor, a camera, an IP phone, a cell phone or any other communication hardware, software, and/or encoded logic that supports the communication of packets of media (or frames) using communication network **40***a*. Endpoints **20***a*-**20***d* may also include unattended or automated systems, gateways, other intermediate components, or other devices that can establish media sessions. Although FIG. **1** illustrates a particular number and configuration of endpoints, automatic call distributors, segments, nodes, and gateways, communication system **10** contemplates any number or arrangement of such components for communicating media.

FIG. **2** illustrates ACD **30** in more detail, in accordance with a particular embodiment of the present invention. ACD **30** includes an interface **110**, a processor **120**, a first queue **140***a*, a second queue **140***b*, and a memory **130**. When ACD **30** receives a call on interface **110**, if an agent **160** is unavailable to answer the call, processor **120** may store the call in queues **160**. In queuing the call, processor **120** may assign a priority to the call based in part on whether the caller agrees to a time limit for the call. The order in which calls will be answered from first queue **140***a* and second queue **140***b* is based at least in part, on the priority assigned to each call.

Interface **110** couples ACD **30** with communication network **40***a*, using segment **70**. In a particular embodiment, processor **120** provides, in whole or in part, the functionality of interface **110**, and interface **110** and processor **120** represent the same component. In general, interface **110** may represent any appropriate combination of hardware and/or software suitable to implement the functionality described herein.

First queue **140***a* and second queue **140***b* store calls received by ACD **30** until an appropriate agent **160** is available to answer the calls. Processor **120** may assign a priority to a particular call by storing the call in a particular queue **140**. First queue **140***a* and second queue **140***b* store calls by storing information identifying a port of ACD **30** through which the call is connected, storing information identifying a network address at which caller **95** can be contacted, or otherwise storing information sufficient to allow an agent **160** to interact with caller **95** when the call advances to the front of that particular queue **140**. First queue **140***a* and second queue **140***b* may represent portions of memory **130**, distinctly separate memory elements, or any other components suitable for storing calls received by ACD **30**. Although FIG. **2** shows an ACD **30** that includes a first queue **140***a* and second queue **140***b*, ACD **30** may be configured to include any suitable number of queues **140**.

In a particular embodiment, first queue **140***a* and second queue **140***b* represent first-in-first-out (FIFO) queues with the oldest call in that particular queue being connected to the next available agent. More specifically, queues **140** include a back end and a front end. ACD places a call at the back end of, for example, first queue **140** and, as previous calls are removed from first queue **140**, the call advances to the front end of first

queue **140**. Once the call reaches the front end, the call will be connected to the next available agent **160***a* taking calls from first queue **140***a*.

Additionally, first queue **140***a* and second queue **140***b* may each be associated with a particular subset of agents **160**. The particular subset of agents **160** assigned to first queue **140***a* or second queue **140***b* may respond only to calls stored to the particular queue **140** assigned to that subset. Alternatively, all agents **160** may be capable of accepting calls from either queue **140**. In general, agents **160** may be assigned to queues **140** in any appropriate manner, depending on the configuration of ACD **30**. For the purposes of this example, it is assumed that agents **160***a* accept calls from first queue **140***a*, while agents **160***b* accept calls from second queue **140***b*.

Processor **120** routes calls received by ACD **30**, generates prompts for and processes responses from caller **95**, and provides other computational functionality that may be used by ACD **30**. Processor **120** may be a general-purpose computer, dedicated microprocessor, or any other suitable processing device. Examples of processor **120** include application-specific integrated circuits (ASICs), field-programmable gate arrays (FPGAs), digital signal processors (DSPs) and any other suitable specific or general-purpose processors.

Memory **130** stores software, configuration data, caller profiles, and any other appropriate information to be used in operation of ACD **30**. Memory **130** may also include components of queue **140**. Memory **130** may comprise any collection and arrangement of volatile or non-volatile, local or remote devices suitable for storing data, such as for example computer readable medium random access memory (RAM) devices, read only memory (ROM) devices, magnetic storage devices, optical storage devices, or any other suitable data storage devices.

Timer **170** tracks a call time associated with a call received by ACD **30**. As used herein, the "call time" may represent any appropriate measure of time associated with the call. As one example, the call time may represent the span of time between when caller **95** is connected to an agent **160** and the end of the call. As another example, if caller **95** must navigate through multiple agents before connecting with a specialized agent appropriate for handling the call, the call time may represent the span of time between caller **95** finally being connected to the specialized agent and the end of the call. As yet another example, if caller **95** is frequently placed on hold by agent **160***a* during the course of the call, the call time may represent only the span of time when caller **95** is able to interact with agent **160***a*. Timer **170** may represent any suitable combination of hardware, software and/or embedded logic capable of providing the described functionality. Examples of timer **170** include, but are not limited to, a software process operating on processor **120**, a wristwatch operated by agent **160***a*, and a digital timer mounted on endpoint **20**. In the illustrated embodiment, timer **170** represents a combination of software and hardware located within ACD **30** and capable of concurrently timing call times associated with all calls being handled by ACD **30**.

In operation, when ACD **30** receives a call, processor **120** determines whether any of agents **160** are currently available. If so, the call may be directed immediately to the available agent **160**. In such a situation, the call may be routed directly to a particular agent **160** without ever being routed through either of first queue **140***a* or second queue **140***b*. Depending on the configuration of ACD **30**, caller **90** may or may not be prompted to commit to a predetermined time limit if an agent **160** is available immediately.

If, however, no agent **160** is available to assist caller **95**, processor **120** prompts caller **95** to choose between first queue **140***a* and second queue **140***b* based on whether caller **95** is willing to commit to a predetermined limit for the call time. Depending on the characteristics of endpoint **20**, processor **120** may prompt caller **95** by playing a voice recording, sending an instant message, transmitting an SMS text message and/or communicating with endpoint **20** in any other manner. Processor **120** may also provide additional information to assist caller **95** in making the choice. For example, processor **120** may indicate how many other callers **95** are already in each queue **140** or may estimate a wait time for each queue **140**. The time limit presented to caller **95** may apply to any appropriate measure of the call time, as described above.

Caller **95** then selects between first queue **140***a* and second queue **140***b* by either agreeing or refusing to commit to the time limit. Depending on the characteristics of the particular endpoint **20** being used, caller **95** may dial a specified digit, press a keyboard key, verbally agree to the constraint, or otherwise indicate the option caller **95** has chosen.

Although either queue **140** may be configured to receive calls associated with a particular response of user **95**, for the purposes of illustration, it is assumed that processor **120** places the call in first queue **140***a* if caller **95** agrees to the time limit. If caller **95** refuses to commit to the time limit, then, based on this assumption, processor **120** places the call at a back end of second queue **140***b*. When the call advances to the front end of second queue **140***b*, processor **120** connects the call to the next available agent **160***b*. This connection may comprise, for example, coupling caller **95** with the suitable agent if the call comprises a voice call. Once connected, caller **95** may interact with agent **160***b* as desired, and no time limits are placed on the call.

If, instead, caller **95** agrees to the time limit, processor **120** stores the call at the back end of first queue **140***a*. When the call advances to the front end of first queue **140***a*, processor **120** connects the call to the next available agent **160***a* and caller **95** may then interact with agent **160***a*. As noted above, this connection may comprise, for example, coupling caller **95** with the suitable agent if the call comprises a voice call.

Because caller **95** agreed to the time limit, the call time has a predetermined maximum limit. Specifically, when ACD connects caller **95** to agent **160***a*, agent **160***a* or processor **120** starts timer **170**. Depending on the characteristics and configuration of timer **170** and ACD **30**, this may represent agent **40***a* checking a start time for the call on a clock or watch that represents timer **170**, processor **120** beginning a software process representing timer **170**, or any other action that causes timer **170** to begin timing the call time. Processor **120** and/or agent **160***a* monitors timer **170** until caller **95** terminates the call.

If processor determines that the call time has met or exceeded the time limit, processor **120** initiates a remedial action. This remedial action may represent any suitable action taken by ACD **30** to disconnect or reassign the call. Furthermore, the remedial action may include actions taken by agent **160***a* and/or actions initiated by processor **120** or other components of ACD **30**.

As one example, the remedial action may include disconnecting the call. In this case, ACD **30** or agent **160***a* may hang up on caller **95** once the time limit has been reached. If caller **95** wishes to continue the conversation or receive more assistance from an agent **160***a*, caller **95** will then call ACD **30** back and begin the call again.

As another example, the remedial action may include placing the call in the back end of an appropriate queue **140**. Depending on the configuration of ACD **30**, this may include returning the call to the back end of first queue **140***a* or

placing the call at the back end of second queue **140***b*. Thus, once the call time exceeds the time limit, agent **160***a* or processor **120** places the call at the back end of the appropriate queue **140**. If caller **95** wishes to continue the call, caller **95** then waits until the call once again advances to the front of the respective queue **140**. At that point, caller **95** will be connected to another agent **160** and caller **95** will be able to complete the call. Depending on the configuration of ACD **30**, the call time may be reset and caller **95** may still be constrained by the time limit, or caller may now have an unlimited amount of time with which to interact with agent **160**.

ACD **30** may additionally provide warnings to caller **95** and/or agent **160***a* before the call time reaches the time limit. For example, ACD **30** may provide a warning indication to caller **95** a predetermined amount of time before the call time reaches the time limit. The warning indication may be an audio tone that is transmitted to caller **95**, a recorded message that is played to caller **95**, a popup window that is displayed on endpoint **20**, or any other suitable form of indication that informs caller **95** that the call time has nearly reached the time limit.

Furthermore, particular embodiments of ACD **30** may allow agent **160***a* to extend the time limit if agent **160***a* chooses. Agent **160***a* may choose to extend the time limit based on how close the call is to completion, the number of calls waiting in queues **140**, or any other appropriate considerations. To extend the call, agent **160***a* indicates to ACD **30**, such as by pressing a button at endpoint **20**, that the call should be extended. If agent **160***a* indicates the time limit should be extended, a predetermined extension time is added to the time limit and no remedial action is taken when the call time reaches the time limit.

If agent **160***a* chooses to extend the call, the call continues uninterrupted beyond the time limit. If the call continues through the end of the extension time, agent **160***a* or ACD **30** may then initiate the remedial action. In a particular embodiment, ACD **30** may provide a warning to caller **95** a predetermined amount of time before the extension time expires. Agent **160***a* may or may not have the opportunity to extend the call again at the end of the extension time, depending on the configuration of ACD **30**.

Thus, particular embodiments of ACD **30** provide a variety of benefits. By offering caller **95** access to an express queue in return for committing to a limited call time, ACD **30** can reduce wait times for callers **95**. Additionally, particular embodiments of ACD **30** may allow agent **160***a* to exercise discretion in choosing to extend the limit for the call time of a particular call, providing more efficient use of ACD resources. Furthermore, particular embodiments of ACD **30** may provide a warning indication to caller **95** and/or agent **160** before the time limit expires to allow the caller to conclude the call before the remedial action is initiated, also allowing for more efficient use of ACD resources.

FIG. **3** is a flow chart illustrating a method for routing calls of an automatic call distributor system in accordance with a particular embodiment of the present invention. In the illustrated embodiment, ACD **30** places calls from callers who commit to the time limit in first queue **140***a*, which is answered by agents **160***a*. ACD **30** places calls from callers who choose not to commit to the time limit in second queue **140***b*, which is answered by agents **160***b*. Additionally, in this example, ACD **30** is configured to provide a warning indication to caller **95** if the call time exceeds a first predetermined time period and to allow agents **160** to decide whether to extend the call if the call time exceeds a second predetermined period of time. Furthermore, for the purposes of this example, the remedial action consists of ACD returning the call to back end of second queue **140***b*.

The method begins at step **300** where ACD receives a call from caller **95**. The call may comprise a request for service from a suitable agent and may be received at interface **110** of ACD **30**. The connection may be made with an endpoint of caller **95**, such as an analog telephone, IP phone, cell phone or PC.

At step **310**, ACD prompts caller **95** to commit to a predetermined time limit for a call time associated with the call. ACD **30** determines whether caller **95** has chosen to commit to the predetermined time limit at step **320**. If the caller chooses not to commit to the predetermined time limit, ACD stores the call at the back end of second queue **140***b* at step **330**. As agents **160***b* answer calls stored in second queue **140***b*, the call advances to the front end of second queue **140***b*. Once the call reaches the front end of second queue **140***b*, the next available agent **160***b* answers call at step **340**. At step **350**, agent **160***b* assists caller **95** until agent **160***b* finishes assisting caller **95**. Agent **160***b* then disconnects the call at step **360**, thereby ending the process.

If instead caller **95** commits to the predetermined time limit, ACD **30** stores the call at the back end of first queue **140***a* at step **360**. As calls stored in first queue **140***a* are answered, the call advances toward the front end of first queue **140***a*. Once the call reaches the front end of first queue **140***a*, the next available agent **160***a* answers the call at step **370**. Additionally, agent **160***a* begins timing the call at step **380**. Agent **160***a* then begins assisting the caller at step **390**.

At step **400**, agent **160***a* determines whether the call time has exceeded the first predetermined time period. If not, agent **160***a* determines whether agent **160***a* has finished assisting caller **95** at step **410**. If agent **160***a* has finished assisting caller **95**, agent **160***a* disconnects the call at step **420**, ending the process. If agent **160***a* has not finished assisting caller **95**, agent **160***a* continues assisting caller **95**, returning to step **390**.

Continuing with step **420**, if agent **160***a* determines, that the call time has exceeded the first predetermined time period, agent **160***a* activates the warning indication at step **430**. Agent **160***a* continues assisting caller **95** at step **440**. At step **450** agent **160***a* determines whether the call time has exceeded the second predetermined period of time. If not, agent **160***a* determines whether agent **160***a* has finished assisting caller **95** at step **460**. If agent **160***a* has finished assisting caller **95**, agent **160***a* disconnects the call at step **470**, ending the process. If agent **160***a* has not finished assisting caller **95**, agent **160***a* continues assisting caller **95**, returning to step **440**.

Continuing with step **460**, if agent **160***a* determines that the call time has exceeded the second predetermined time period, agent **160***a* decides whether to extend the call at step **480**. If agent **160***a* decides not to extend the call, agent **160***a* stores the call in second queue **140***b* at step **330**.

If agent **160** decides to extend the call, agent continues assisting caller **95** at step **490**. At step **500** agent **160***a* determines whether the call time has exceeded the third predetermined period of time. If not, agent **160***a* determines whether agent **160***a* has finished assisting caller **95** at step **510**. If agent **160***a* has finished assisting caller **95**, agent **160***a* disconnects the call at step **520**, ending the process. If agent **160***a* has not finished assisting caller **95**, agent **160***a* continues assisting caller **95**, returning to step **490**. If instead agent **160***a* determines the call time has exceeded the third predetermined period of time, agent **160***a* stores the call in second queue **140***b* at step **330**.

Although the present invention has been described with several embodiments, a myriad of changes, variations, alter-

ations, transformations, and modifications may be suggested to one skilled in the art, and it is intended that the present invention encompass such changes, variations, alterations, transformations, and modifications as fall within the scope of the appended claims.

What is claimed is:

1. A method for routing calls of an automatic call distributor system, comprising:

receiving a call from a caller requesting connection with one of a plurality of agents;

providing the caller with an option to commit to a predetermined time limit for the call time; and

assigning a higher priority to the call if the caller commits to the predetermined time limit.

2. The method of claim **1** wherein assigning the call a higher priority comprises:

queuing the call in a queue, in response to the caller committing to the predetermined time limit;

queuing the call in a second queue, in response to the caller choosing not to commit to the predetermined time limit.

3. The method of claim **1**, further comprising:

connecting the call to one of the agents;

determining that a call time associated with the call has exceeded a predetermined time limit; and

initiating a remedial action, in response to determining that the call time has exceeded the predetermined time limit.

4. The method of claim **3**, wherein initiating the remedial action comprises disconnecting the call.

5. The method of claim **3**, wherein initiating the remedial action comprises re-queuing the call in the first queue.

6. The method of claim **3**, wherein initiating the remedial action comprises:

deciding whether to extend the predetermined time limit;

determining that the time associated with the call has exceeded a second predetermined time limit; and

initiating a second remedial action in response to determining that the time associated with the call has exceeded the second predetermined time limit.

7. The method of claim **6**, wherein initiating the second remedial action comprises disconnecting the call.

8. The method of claim **6**, wherein initiating the second remedial action comprises re-queuing the call in the first queue.

9. The method of claim **6**, further comprising initiating a third remedial action in response to deciding not to extend the predetermined time limit.

10. The method of claim **3**, wherein connecting the call to one of the agents further comprises connecting the call to one of the agents and starting a timer in response to connecting the call, and wherein determining that the time associated with the call has exceeded the predetermined time limit comprises determining that the time associated with the call has exceeded the predetermined time limit based on the timer.

11. The method of claim **3**, wherein determining that the time associated with the call has exceeded the predetermined time limit comprises:

determining that the time associated with the call has exceeded a first predetermined time limit;

activating a warning indication in response to determining that the time has exceeded the first predetermined time limit; and

determining that the time associated with the call has exceeded a second predetermined time limit.

12. The method of claim **11**, wherein indicating to the caller comprises generating an audio tone.

13. The method of claim **11**, wherein indicating to the caller comprises playing a recorded message to the caller.

14. The method of claim **1**, wherein providing the caller with the option comprises:

providing the caller with an estimated wait time based at least on the predetermined time limit; and

providing the caller with the option to commit to the predetermined time limit for the call time.

15. An automatic call distributing system for managing calls of an automatic call distributor, comprising:

at least one interface operable to receive a call from a caller over a first connection with a first endpoint of the caller, the call comprising a request for service;

a processor operable to:

provide the caller with an option to commit to a predetermined time limit for a call time; and

assign a higher priority to the caller if the caller commits to the predetermined time limit.

16. The system of claim **15** further comprising:

a first queue operable to retain the call until an agent for the first queue becomes available; and

a second queue operable to retain the call until an agent for the second queue becomes available; and

wherein the processor is operable to assign a higher priority to the caller by queuing the call in the first queue in response to the caller committing to the predetermined time limit.

17. The system of claim **16**, wherein the processor is further operable to:

queue the call in the first queue, in response to the caller selecting the first queue;

connect the call to an agent when an agent becomes available for the first queue;

determine that a time associated with the call has exceeded a predetermined time limit; and

initiate a remedial action, in response to determining that the time associated with the call has exceeded the predetermined time limit.

18. The system of claim **17** wherein the processor is operable to initiate the remedial action by disconnecting the call.

19. The system of claim **17**, wherein the processor is operable to initiate the remedial action by re-queuing the call in the first queue.

20. The system of claim **17**, wherein the processor is operable to initiate the remedial action by:

deciding whether to extend the predetermined time limit;

determining that the time associated with the call has exceeded a second predetermined time limit; and

initiating a second remedial action in response to determining that the time associated with the call has exceeded the second predetermined time limit.

21. The system of claim **20**, wherein the processor is operable to initiate the second remedial action by disconnecting the call.

22. The system of claim **20**, wherein the processor is operable to initiate the second remedial action by re-queuing the call in the first queue.

23. The system of claim **20**, further comprising initiating a third remedial action in response to deciding not to extend the predetermined time limit.

24. The system of claim **17**, wherein the processor is further operable to start a timer in response to connecting the call to one of the agents, and wherein the processor is further operable to determine that the time associated with the call has exceeded the predetermined time limit based on the timer.

25. The system of claim **17**, wherein the processor is further operable to determine that the time associated with the call has exceeded the predetermined time limit by:

determining that the time associated with the call has exceeded a first predetermined time limit;

activating a warning indication in response to determining that the time has exceeded the first predetermined time limit; and

determining that the time associated with the call has exceeded a second predetermined time limit.

26. The system of claim **25**, wherein the processor is operable to activate a warning indication by generating an audio tone.

27. The system of claim **25**, wherein the processor is operable to activate a warning indication by playing a recorded message to the caller.

28. The system of claim **15**, wherein the processor is operable to provide the caller with the option by:

providing the caller with an estimated wait time based at least on the predetermined time limit; and

providing the caller with the option to commit to the predetermined time limit for the call time.

29. A computer program stored on a computer readable medium, the computer program operable to:

receive a call from a caller requesting connection with one of a plurality of agents;

provide the caller with an option to commit to a predetermined time limit for the call time; and

assign a higher priority to the call if the caller commits to the predetermined time limit.

30. The computer program of claim **29**, wherein the computer is further operable to assign the higher priority to the call by:

queuing the call in a first queue, in response to the caller committing to the predetermined time limit;

queuing the call in a second queue, in response to the caller choosing not to commit to the predetermined time limit.

31. The computer program of claim **29**, wherein the computer program is further operable to:

queue the call in the first queue, in response to the caller committing to the predetermined time limit;

connect the call to one of the agents;

determine that a call time associated with the call has exceeded a predetermined time limit; and

initiate a remedial action, in response to determining that the call time has exceeded the predetermined time limit.

32. The computer program of claim **31**, wherein the computer program is operable to initiate the remedial action by disconnecting the call.

33. The computer program of claim **31**, wherein the computer program is operable to initiate the remedial action by re-queuing the call in the first queue.

34. The computer program of claim **31**, wherein the computer program is operable to initiate the remedial action by:

deciding whether to extend the predetermined time limit;

determining that the time associated with the call has exceeded a second predetermined time limit; and

initiating a second remedial action in response to determining that the time associated with the call has exceeded the second predetermined time limit.

35. The computer program of claim **34**, wherein the computer program is operable to initiate the second remedial action by disconnecting the call.

36. The computer program of claim **34**, wherein the computer program is operable to initiate the second remedial action by re-queuing the call in the first queue.

37. The computer program of claim **34**, wherein the computer program is further operable to initiate a third remedial action in response to deciding not to extend the predetermined time limit.

38. The computer program of claim **34**, wherein the computer program is further operable to start a timer in response to connecting the call to one of the agents, and wherein the computer program is further operable to determine that the time associated with the call has exceeded the predetermined time limit based on the timer.

39. The computer program of claim **38**, wherein the computer program is operable to determine that the time associated with the call has exceeded the predetermined time limit by:

determining that the time associated with the call has exceeded a first predetermined time limit;

activating a warning indication in response to determining that the time has exceeded the first predetermined time limit; and

determining that the time associated with the call has exceeded a second predetermined time limit.

40. The computer program of claim **39**, wherein the computer program is operable to activate the warning indication by generating an audio tone.

41. The computer program of claim **39**, wherein the computer program is operable to activate the warning indication by playing a recorded message to the caller.

42. The computer program of claim **39**, wherein the computer program is operable to provide the caller with the option by:

providing the caller with an estimated wait time based at least on the predetermined time limit; and

providing the caller with the option to commit to the predetermined time limit for the call time.

43. A system for routing calls of an automatic call distributor system, comprising:

means for receiving a call from a caller requesting connection with one of a plurality of agents;

means for providing the caller with an option to commit to a predetermined time limit for the call time; and

means for assigning a higher priority to the call if the caller commits to the predetermined time limit.

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